Abstract Submitted
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Dilution factor measurement for a vibrating steel string[1] MOISES CASTILLO, Department of Physics and Astronomy and Center for Gravitational Wave Astronomy, University of Texas at Brownsville, GIANPIETRO CAGNOLI, Laboratoire des Matériaux Avancés, Université Claude Bernard Lyon 1, MARIO DIAZ, Department of Physics and Astronomy and Center for Gravitational Wave Astronomy, University of Texas at Brownsville — Measurements of mechanical losses have been done in the past in configurations parallel and perpendicular to the gravitational potential of earth with different sample shapes. Gravity will modify the quality factor of resonances when the restoring force depends on it, like in a pendulum, because of the conservative nature of the gravitational field. The configuration used in this experiment involves a steel string under tension. The restoring force will be due to the rigidity of the string and tension rather than gravity. The goal is to quantify the relation between the tension of a steel string and its quality factor for varied resonant modes and to demonstrate that the tension of the string works like a conservative field for the string dynamics.

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